

REMARKS

This communication is a full and timely response to the non-final Office Action dated August 11, 2004, the period for response being extended through a Petition of One-Month Extension of Time submitted herewith. By this communication, claims 7-10 have been canceled without prejudice, and the abstract and claims 1-6 have been amended.

The abstract has been amended to have only one paragraph. No new matter has been added.

Claim 1 has been amended to recite a plurality of source lines; a plurality of gate lines; an active matrix display; a vertical drive circuit; a first pad area; a second pad area; a seal area; and a horizontal aging circuit formed on a substrate of the liquid crystal display panel, wherein the plurality of source lines and gate lines are laid out on the liquid crystal display panel so that the source lines and gate lines intersect, the active matrix display having a plurality of pixels arranged at each intersection of the source lines and the gate lines such that the plurality of pixels form a matrix, the vertical drive circuit selecting each pixel by sequentially applying scan pulses to the gate lines, the first pad area is at a first edge portion of the substrate and is connected to a first end of each source line and to a horizontal drive circuit external to the substrate, the second pad area is at a second edge portion of the substrate, wherein a pitch of the second pad area is wider than a pitch of the first pad area, the horizontal aging circuit is at the seal area, connected to a second end of each source line, and drives all source lines by a signal propagated through a single signal line or three signal lines in response to a control signal on a control signal line, and at least one vertical drive line is wired between the second pad area and the vertical drive circuit, and one of the control signal line, the single signal line, and the three signal lines are wired between the second pad area and the horizontal aging circuit. Support for the changes to claim 1 can be found variously throughout the specification, for example, at page 10, line 17 through page 12, line 8. No new matter has been added.

Claim 2 has been amended to recite a plurality of source lines; a plurality of gate lines; an active matrix display; a horizontal drive circuit; a first pad area; a second pad area; a seal area; and a vertical aging circuit formed on a substrate of the liquid crystal display panel, wherein the plurality of source lines and gate lines are laid out on the liquid crystal display panel so that the source lines and gate lines intersect, the active matrix display having a plurality of pixels arranged at each intersection of the source lines and the gate lines such that the plurality

of pixels form a matrix, the horizontal drive circuit selectively drives the source lines, the first pad area is at a first edge portion of the substrate, connects to a first end side of each gate line and to a vertical drive circuit external to the substrate, the second pad area is at a second edge portion of the substrate, wherein a pitch of the second pad area is wider than a pitch of the first pad area, the vertical aging circuit is at the seal area, connected to a second end of each gate line, and drives all gate lines by a scan pulse propagated through a single scan line in response to a control signal on a control signal line, and at least one horizontal drive line is wired between the second pad area and the horizontal drive circuit, and the control signal line and the scan line are wired between the second pad area and the vertical aging circuit. Support for the changes to claim 2 can be found variously throughout the specification, for example, at page 10, line 17 through page 12, line 8. No new matter has been added.

Claim 3 has been amended to recite a plurality of source lines; a plurality of gate lines; an active matrix display; a first pad area; a second pad area; a third pad area; a seal area; a horizontal aging circuit; a vertical aging circuit on a substrate of the liquid crystal panel, wherein the plurality of source lines and gate lines are laid out on the liquid crystal display panel so that the source lines and gate lines intersect, the active matrix display having a plurality of pixels arranged at each intersection of the source lines and the gate lines such that the plurality of pixels form a matrix, the first pad area is at a first edge portion of the substrate and is connected to a first end of each source line and to a horizontal drive circuit external to the substrate, the second pad is a second edge portion of the substrate and is connected to a first end of each gate lines and able to a vertical drive circuit external to the substrate, the third pad area having a pitch wider than a pitch of the first pad area and a pitch of the second pad area, the horizontal aging circuit is at the seal area, connected to a second end of each source line, and drives all source lines by a signal propagated through a single signal line or three signal lines in response to a control signal on a control signal line, the vertical aging circuit is at the seal area, connected to a second end of each gate line, and drives all gate lines by a scan pulse propagated through a single scan line in response to the control signal on the control signal line, and at least one of the control signal line, the single signal line, and the three signal lines are wired between the third pad area and the horizontal aging circuit, and the control signal line and the scan line are wired between the third pad area and the vertical aging circuit. Support for the changes to claim 3 can be found variously throughout the specification, for example, at page 10, line 17 through page 12, line 8. No new matter has been added.

Claim 4 has been amended to recite the horizontal aging circuit drives each source line by a signal propagated through the single signal line or the three signal lines in response to the control signal on the control signal line via CMOS switches, NMOS switches, or PMOS switches. Support for the changes to claim 4 can be found variously throughout the specification, for example, at page 15, lines 3-12. No new matter has been added.

Claim 5 has been amended to recite the vertical aging circuit drives each gate line by a scan pulse propagated through the scan line in response to the control signal on the control signal line via CMOS switches, NMOS switches, or PMOS switches. Support for the changes to claim 5 can be found variously throughout the specification, for example, at page 16, lines 3-12. No new matter has been added.

Claim 6 has been amended to recite the horizontal aging circuit drives each source line by a signal propagated through the single signal line or the three signal lines in response to the control signal on the control signal line via CMOS switches, NMOS switches, or PMOS switches, and the vertical aging circuit drives each gate line by a scan pulse propagated through the scan line in response to the control signal on the control signal line via CMOS switches, NMOS switches, or PMOS switches. Support for the changes to claim 6 can be found variously throughout the specification, for example, at page 16, line 13 through page 17, line 1. No new matter has been added.

Claims 1-6 are pending where claims 1-3 are independent.

Objection to the Abstract

The abstract was objected to for having improper form. Applicant has provided a substitute abstract that improves idiomatic English and form. Accordingly, Applicant respectfully requests that the objection to the Abstract be withdrawn.

Rejection Under 35 U.S.C. §102

Claims 1-3 and 7-9 were rejected under 35 U.S.C. §102(b) as unpatentable over *Kuwashiro*, U.S. Patent No. 5,945,984. Applicant respectfully traverses this rejection.

Claim 1 recites a liquid crystal panel display, comprising a plurality of source lines; a plurality of gate lines; an active matrix display; a vertical drive circuit; a first pad area; a second pad area; a seal area; and a horizontal aging circuit formed on a substrate of the liquid crystal display panel, wherein the plurality of source lines and gate lines are laid out on the liquid

crystal display panel so that the source lines and gate lines intersect, the active matrix display having a plurality of pixels arranged at each intersection of the source lines and the gate lines such that the plurality of pixels form a matrix, the vertical drive circuit selecting each pixel by sequentially applying scan pulses to the gate lines, the first pad area is at a first edge portion of the substrate and is connected to a first end of each source line and to a horizontal drive circuit external to the substrate, the second pad area is at a second edge portion of the substrate, wherein a pitch of the second pad area is wider than a pitch of the first pad area, the horizontal aging circuit is at the seal area, connected to a second end of each source line, and drives all source lines by a signal propagated through a single signal line or three signal lines in response to a control signal on a control signal line, and at least one vertical drive line is wired between the second pad area and the vertical drive circuit, and one of the control signal line, the single signal line, and the three signal lines are wired between the second pad area and the horizontal aging circuit.

Kuwashiro discloses a display device that a liquid crystal panel 3 having an active matrix display 1 that includes a plurality of signal lines that intersect to form a matrix (X and Y). A storage capacitor that runs parallel to the scanning lines Y. An X-driver circuit and a Y-driver circuit are on the substrate and are connected to a control circuit that supplies desired signals in response to externally applied input signals. Dummy pads 731-1 and 731-2 are connected to data pads 721. The dummy pads 731-1 and 731-2 are larger in area than the data pads 721 and correspond to X-TAB chips 601-1 through 601-8.

Kuwashiro, however, fails to disclose, teach, or suggest at least a horizontal drive circuit external to the substrate, the horizontal aging circuit is at the seal area, connected to a second end of each source line, and drives all source lines by a signal propagated through a single signal line or three signal lines in response to a control signal on a control signal line. At best, *Kuwashiro* discloses that the X-driver circuit and Y-driver circuit are electrically connected through a control circuit, and each supplies signals in response to externally applied input signals (col. 5, lines 26-53).

To properly anticipate a claim, the document must disclose, explicitly or implicitly, each and every feature recited in the claim. See Verdegall Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). *Kuwashiro* fails to disclose, teach, or suggest every element recited in independent claim 1, therefore this claim is not anticipated by

Kuwashiro. Accordingly, Applicant respectfully requests that the rejection of claim 1 under 35 U.S.C. §102 be withdrawn, and this claim be allowed.

Claim 2 recites a liquid crystal panel display, comprising a plurality of source lines; a plurality of gate lines; an active matrix display; a horizontal drive circuit; a first pad area; a second pad area; a seal area; and a vertical aging circuit formed on a substrate of the liquid crystal display panel, wherein the plurality of source lines and gate lines are laid out on the liquid crystal display panel so that the source lines and gate lines intersect, the active matrix display having a plurality of pixels arranged at each intersection of the source lines and the gate lines such that the plurality of pixels form a matrix, the horizontal drive circuit selectively drives the source lines, the first pad area is at a first edge portion of the substrate, connects to a first end side of each gate line and to a vertical drive circuit external to the substrate, the second pad area is at a second edge portion of the substrate, wherein a pitch of the second pad area is wider than a pitch of the first pad area, the vertical aging circuit is at the seal area, connected to a second end of each gate line, and drives all gate lines by a scan pulse propagated through a single scan line in response to a control signal on a control signal line, and at least one horizontal drive line is wired between the second pad area and the horizontal drive circuit, and the control signal line and the scan line are wired between the second pad area and the vertical aging circuit.

Kuwashiro fails to disclose, teach, or suggest at least a vertical drive circuit external to the liquid crystal display panel, the vertical aging circuit is at the seal area, connected to a second end of each gate line, and drives all gate lines by a scan pulse propagated through a single scan line in response to a control signal on a control signal line. As discussed above, *Kuwashiro* discloses that the X-driver circuit and Y-driver circuit are on the substrate and are electrically connected through a control circuit, and each supplies signals in response to externally applied input signals (col. 5, lines 26-53).

To properly anticipate a claim, the document must disclose, explicitly or implicitly, each and every feature recited in the claim. *See Verdegall Bros. v. Union Oil Co. of Calif.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). *Kuwashiro* fails to disclose, teach, or suggest every element recited in independent claim 2, therefore this claim is not anticipated by *Kuwashiro*. Accordingly, Applicant respectfully requests that the rejection of claim 2 under 35 U.S.C. §102 be withdrawn, and this claim be allowed.

Claim 3 recites a liquid crystal display panel, comprising a plurality of source lines; a plurality of gate lines; an active matrix display; a first pad area; a second pad area; a third pad

area; a seal area; a horizontal aging circuit; a vertical aging circuit on a substrate of the liquid crystal panel, wherein the plurality of source lines and gate lines are laid out on the liquid crystal display panel so that the source lines and gate lines intersect, the active matrix display having a plurality of pixels arranged at each intersection of the source lines and the gate lines such that the plurality of pixels form a matrix, the first pad area is at a first edge portion of the substrate and is connected to a first end of each source line and to a horizontal drive circuit external to the substrate, the second pad is a second edge portion of the substrate and is connected to a first end of each gate lines and able to a vertical drive circuit external to the substrate, the third pad area having a pitch wider than a pitch of the first pad area and a pitch of the second pad area, the horizontal aging circuit is at the seal area, connected to a second end of each source line, and drives all source lines by a signal propagated through a single signal line or three signal lines in response to a control signal on a control signal line, the vertical aging circuit is at the seal area, connected to a second end of each gate line, and drives all gate lines by a scan pulse propagated through a single scan line in response to the control signal on the control signal line, and at least one of the control signal line, the single signal line, and the three signal lines are wired between the third pad area and the horizontal aging circuit, and the control signal line and the scan line are wired between the third pad area and the vertical aging circuit.

Kuwashiro fails to disclose, teach, or suggest at least a horizontal drive circuit external to the substrate ,a vertical drive circuit external to the substrate, the horizontal aging circuit is at the seal area, connected to a second end of each source line, and drives all source lines by a signal propagated through a single signal line or three signal lines in response to a control signal on a control signal line, and the vertical aging circuit is at the seal area, connected to a second end of each gate line, and drives all gate lines by a scan pulse propagated through a single scan line in response to the control signal on the control signal line. As discussed above, *Kuwashiro* discloses that the X-driver circuit and Y-driver circuit are on the substrate and are electrically connected through a control circuit, and each supplies signals in response to externally applied input signals (col. 5, lines 26-53).

To properly anticipate a claim, the document must disclose, explicitly or implicitly, each and every feature recited in the claim. See Verdegall Bros. v. Union Oil Co. of Calif., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). *Kuwashiro* fails to disclose, teach, or suggest every element recited in independent claim 3, therefore this claim is not anticipated by

Kuwashiro. Accordingly, Applicant respectfully requests that the rejection of claim 3 under 35 U.S.C. §102 be withdrawn, and this claim be allowed.

Claims 4-6 depend from claim 1. By virtue of this dependency, Applicant submits that claims 4-6 are allowable for at least the same reasons given above with respect to claim 1. In addition, Applicant submits that claims 4-6 are further distinguished over *Kuwashiro* by the additional elements recited therein, and particularly with respect to each claimed combination. Applicant respectfully requests, therefore, that the rejection of claims 4-6 under 35 U.S.C. §103 be withdrawn, and these claims be allowed.

Conclusion

Based on at least the foregoing amendments and remarks, Applicants submit that claims 1-6 are allowable, and this application is in condition for allowance. Accordingly, Applicants request favorable reexamination and reconsideration of the application. In the event the Examiner has any comments or suggestions for placing the application in even better form, Applicants request that the Examiner contact the undersigned attorney at the number listed below.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 18-0013, under Order No. SON-2166/SOH from which the undersigned is authorized to draw.

Dated: December 13, 2004

Respectfully submitted,

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Attachments: Substitute Abstract